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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,464	02/19/2004	Alistair J. Price	010826PCT-US	4844

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EXAMINER	
TRAN, DZUNG D	
ART UNIT	PAPER NUMBER
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/29/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,464	PRICE, ALISTAIR J.	
	Examiner	Art Unit	
	Dzung D. Tran	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfeiffer US Publication no. 2003/0035619.

Regarding claim 1, Pfeiffer discloses an optical system comprising:

an optical transmitting end configured to transmit information over at least one channel, each channel being at a different wavelength (page 1, paragraph 0013);

an optical filter including a band filter (F1 of Figure 1) configured to filter at least one optical channel and a periodic filter (F2 of Figure 1) configured to receive, filter, and shape the at least one optical channel from said band filter and provide a single filtered, shaped optical channel; and,

an optical receiving end configured to receive at least single filtered shaped optical channel (page 1, paragraph 0014).

Pfeiffer differs from claim 1 of the present invention in that he does not specifically disclose the optical transmitting end comprises an optical transmitter and the optical receiving end comprises an optical receiver. However, optical transmitting end comprises an optical transmitter and optical receiving end comprises an optical

receiver is well known in the art. Thus, if it not inherently, it would have been obvious that the optical transmitting end comprises an optical transmitter and the optical receiving end comprises an optical receiver in order to transmit the optical signal at the transmitting end and receive the optical signal at the receiving end.

Regarding claim 2, Pfeiffer discloses wherein said band filter F1 is tunable over at least a portion of the optical system wavelength spectrum (page 2, paragraphs 0024-0025).

Regarding claim 3, Pfeiffer discloses wherein said band filter F1 includes at least one of fiber Bragg gratings, Fabry-Perot filters and thin film filters (page 2, paragraph 0025, page 3, paragraph 0070).

Regarding claims 4 and 5, Pfeiffer discloses wherein said periodic filter F2 includes at least one of Mach-Zehnder and Michelson interferometric filters(page 2, paragraphs 0024-0025).

Regarding claim 6, Pfeiffer discloses wherein said band filter F1 is a tunable Fabry-Perot filter and said periodic filter F2 is Mach-Zehnder filter.

Regarding claim 7, Examiner take an official notice that periodic filter is a double pass Mach-Zehnder filter is well recognized in the art.

Regarding claims 8 and 9, an optical transmitter that transmit information over two channels, each channel being at a different wavelength is well known in the art (Examiner take an official notice that the well known tunable optical transmitter is perform the same function). Furthermore, two or more optical filters that perform the same function as the optical filter of Pfeiffer discloses in claim 1 is merely a duplicate

parts for a multiplied effect. Therefore, it would have been obvious to a person of ordinary skill in the art to include the tunable optical transmitter for transmitting the information over two channels and two optical filters each including a band filter configured to filter at least one optical channel and a periodic filter configured to receive the at least one optical channel from said band filter and provide a single filtered optical channel and shape the bandwidth of the single filtered, shaped optical channel and optical receiver is one of a plurality of optical receivers, each configured to receive and convert the two filtered, shaped optical channels into electrical signals and combined the two electrical signals into one electrical signal from at least one of said optical filters. One of ordinary skill in the art would have been motivated to do that in order to transmit and receive a plurality optical channels over a WDM optical system.

Regarding claims 10-13, Pfeiffer discloses a method/apparatus of an optical receiver comprising:

an optical filter including a band filter (F1 of Figure 1) configured to filter at least one optical channel and a periodic filter (F2 of Figure 1) configured to receive, filter, and shape the at least one optical channel from said band filter and provide a single filtered, shaped optical channel (page 2, paragraph 0043).

Pfeiffer differs from claims 10-13 of the present invention in that he does not specifically disclose the optical receiving end comprises an optical receiver that includes a photodiode configured to receive the single filtered, shaped optical channel and convert it into an electrical signal. However, an optical receiver that includes a photodiode is well known in the art. Thus, if it not inherently, it would have been

obvious that optical receiving end comprises an optical receiver that includes a photodiode in order to receive the optical signal at the receiving end.

Regarding claim 14, whether or not the system comprises a plurality of transmitters and a plurality of receivers is merely a duplicate parts for a multiplied effect. Therefore, it would have been obvious to a person of ordinary skill in the art to include a plurality of transmitters and a plurality of receivers for transmitting and receiving the information over the fiber. One of ordinary skill in the art would have been motivated to do that in order to transmit and receive a plurality optical channels over a WDM optical system.

Regarding claim 15, Pfeiffer discloses the optical filter and the receiver are included in the same module (page 2, paragraph 0043).

Regarding claim 16, Pfeiffer discloses the periodic filter is included with the receiver within the same module and the band filter is not included in the module (page 3, paragraph 0070). Furthermore, since the application does not disclose the advantage of the receiver module having only the periodic filter is included with the receiver or the receiver module having the band filter and the periodic filter is included with the receiver. Thus, whether the receiver module having only the periodic filter is included with the receiver or the receiver module having the band filter and the periodic filter is included with the receive is merely an engineering design choices.

Regarding claim 17, Pfeiffer discloses band filter F1 is an arrayed waveguide (page 3, paragraph 0070).

Regarding claims 18 and 19, it would have been well known in the art that the periodic filter has a periodic pass band that is adjustable via a controller and the optical system comprise an optical amplifier.

Regarding claim 20, Pfeiffer discloses the band filter has a bandwidth less than the period of the period filter (page 1, paragraph 0006-0007).

Regarding claims 21 and 22, Pfeiffer discloses the periodic filter decreases the amount of optical noise and band pass filter is configured to separate one channel from a plurality of optical channel and the periodic filter filters optical noises from the optical channel (page 1, paragraph 0005-0007)

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Kecket al. U.S. Patent no. 6, 088,494. Aperiodic Mach-Zehnder optical filters

b. Feng et al. U.S. Patent no. 6,674,929. Tunable optical filter

c. Sorin et al. U.S. Patent no. 6,091,744. Wavelength selectable source for WDM applications

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran
12/20/2006

DZUNG TRAN
PRIMARY PATENT EXAMINER